

BEST AVAILABLE COPY**Listing of Claims:**

1. (Currently amended) A capacitor structure, comprising:

a substrate;

a conductive material formed above the substrate;

an insulating material formed on the conductive material, wherein the insulating material and the conductive material serve as a form for defining a plurality of capacitor trenches above the conductive material, the insulating material defining the trench sidewalls and the conductive material defining the trench bases;

a bottom electrode formed onto the capacitor trenches so as to form a layer within the capacitor trenches in contact with the conductive material, wherein the bottom electrode extends up the sides of the capacitor trenches to form bottom electrode sidewalls;

a capacitor dielectric at least partially positioned on the bottom electrode;

and

a top electrode at least partially positioned on the capacitor dielectric, substantially and completely filling the capacitor trenches ~~and forming an interconnect~~.

2. (Original) The capacitor structure of claim 1, wherein the capacitor dielectric is made from a material having a higher dielectric constant than the dielectric constant of the insulating material.

3. (Original) The capacitor structure of claim 1, wherein the capacitor dielectric has a high-k dielectric constant.

4. (Original) The capacitor structure of claim 3, wherein the capacitor dielectric has a dielectric

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constant greater than or equal to about 6.0.

5. (Original) The capacitor structure of claim 1, wherein the capacitor dielectric comprises a stack comprising more than one material.

6. (Original) The capacitor structure of claim 1, wherein the capacitor structure is a discrete capacitor.

7. (Original) The capacitor structure of claim 1, wherein the capacitor structure is configured to be part of an integrated circuit.

8. (Canceled)

9. (Previously presented) The capacitor structure of claim 1, wherein the conductive material layer is comprised of a different material than the bottom electrode.

10. (Previously presented) The capacitor structure of claim 1, wherein the top electrode is at least partially disposed in the capacitor trenches such that the top electrode interdigitates with the bottom electrode.

11. (Original) The capacitor structure of claim 1, wherein the bottom electrode further comprises a bottom electrode top wall.

12. (Original) The capacitor structure of claim 11, wherein the bottom electrode further comprises a bottom electrode base.

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13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)

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24. (Canceled)

25. (Canceled)

26. (Currently amended) A capacitor structure, comprising:

a substrate;

an insulating material formed on the substrate, wherein the insulating material serves as a form for defining a capacitor trench;

a bottom electrode, wherein the bottom electrode comprises a bottom electrode layer in the capacitor trench and a bottom electrode plug disposed within the capacitor trench, wherein the bottom electrode layer extends up the sides of the capacitor trench to form bottom electrode sidewalls;

a capacitor dielectric at least partially positioned on the bottom electrode and in direct contact with the bottom electrode plug and at least partially formed around a majority of ~~the bottom electrode plug~~ and

and

a top electrode at least partially positioned on the capacitor dielectric and ~~at least partially~~ formed around a majority of the bottom electrode plug.

27. (Original) The capacitor structure of claim 26, wherein the capacitor dielectric is made from a material having a higher dielectric constant than the dielectric constant of the insulating

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material.

28. (Original) The capacitor structure of claim 26, wherein the capacitor dielectric has a high-k dielectric constant.

29. (Original) The capacitor structure of claim 26, wherein the capacitor dielectric has a dielectric constant greater than or equal to about 6.0.

30. (Original) The capacitor structure of claim 26, wherein the capacitor dielectric comprises a stack comprising more than one material.

31. (Previously presented) The capacitor structure of claim 26, wherein the capacitor structure is a discrete capacitor.

32. (Original) The capacitor structure of claim 26, wherein the capacitor structure is configured to be part of an integrated circuit.

33. (Original) The capacitor structure of claim 26, further comprising a conductive material layer, wherein the conductive material layer is in contact with the bottom electrode.

34. (Original) The capacitor structure of claim 33, wherein the conductive material layer is a different material than the bottom electrode.

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35. (Original) The capacitor structure of claim 26, wherein the bottom electrode and the capacitor dielectric are formed in the shape of a box.
36. (Original) The capacitor structure of claim 26, wherein the top electrode is at least partially disposed in the capacitor trench such that the top electrode interdigitates with the bottom electrode.
37. (Original) The capacitor structure of claim 26, wherein the bottom electrode layer further comprises a bottom electrode top wall.
38. (Original) The capacitor structure of claim 37, wherein the bottom electrode layer further comprises a bottom electrode base.
39. (Canceled)
40. (Canceled)
41. (Canceled)
42. (Canceled)
43. (Canceled)

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44. (Canceled)

45. (Canceled)

46. (Canceled)

47. (Canceled)

48. (Canceled)

49. (Canceled)

50. (Canceled)

51. (Canceled)

52. (Canceled)

53. (Canceled)

54. (Canceled)

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55. (New) A capacitor structure, comprising:

a substrate;

a metal layer formed above the substrate;

an insulating material at least partially formed on the metal layer, wherein the insulating material serves as an outside sidewall for defining a capacitor trench above the metal layer;

a bottom electrode, comprising a bottom electrode layer in the capacitor trench and a bottom electrode plug disposed within the capacitor trench, wherein the bottom electrode layer directly contacts the metal layer and extends up the sides of the capacitor trench to form bottom electrode sidewalls;

a capacitor dielectric at least partially positioned on the bottom electrode and in direct contact with the bottom electrode layer and the bottom electrode plug; and

a top electrode at least partially positioned on the capacitor dielectric.

56. (New) The capacitor structure of claim 55, wherein the bottom electrode plug is disposed between the bottom electrode layer and the capacitor dielectric such that the bottom electrode plug is in indirect contact with the metal layer.

57. (New) The capacitor structure of claim 55, wherein the bottom electrode plug is completely disposed within the capacitor trench and extends approximately the same length as the outside sidewall.

58. (New) The capacitor structure of claim 55, wherein the bottom electrode plug includes metal.

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59. (New) The capacitor structure of claim 55, wherein the capacitor dielectric and the top electrode extend around a majority of the bottom electrode plug.
60. (New) The capacitor structure of claim 55, further comprising an insulating plug formed on the metal layer and defining inside sidewalls for the capacitor trench, wherein the bottom electrode layer, the capacitor dielectric, and the top electrode at least partially extend around the insulating plug.
61. (New) The capacitor structure of claim 55, further comprising a second bottom electrode plug disposed within the capacitor trench and in direct contact with the capacitor dielectric.
62. (New) The capacitor structure of claim 55, wherein the capacitor dielectric has a dielectric constant greater than or equal to about 6.0.
63. (New) The capacitor structure of claim 55, wherein the capacitor dielectric comprises a stack comprising more than one material.
64. (New) The capacitor structure of claim 55, wherein the bottom electrode layer further comprises a bottom electrode top wall.